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ABSTRACT

The spoken mode of human communication, which leaves no permanent record of itself, is often accounted of less worth or importance than the written or printed word. Such a bias makes it difficult to see certain advantages which accrue to speech communication because of the ephemerality of speech communication. In general, the ephemerality of speech communication focuses the attention upon the event of message production rather than upon the artifact of the message. Specifically, ephemerality in the speech signal (1) may act as a spur to the specialized perception of speech, (2) provides an important precondition for the formation of the individual's processes of symbolically mediated thought, (3) fosters the forming of peculiarly human relationships, and (4) historically has helped provide a means of retaining culturally-acquired knowledge without sacrificing the mobility upon which many early nomadic cultures depend. (Author)

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THE ADVANTAGES OF EPHEMERALITY IN THE ACQUISITION AND CONDUCT OF SPEECH COMMUNICATION

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THE ADVANTAGES OF EPHEMERALITY IN THE ACQUISITION AND CONDUCT OF SPEECH COMMUNICATION

At least one other member of our panel this afternoon is also fond of observing that in the realm of escaping attention, the totally obvious rivals the completely obscure. Certainly one of the most obvious characteristics of speech communication is its ephemerality, and nowadays, as another member of our panel has noted repeatedly, many people consider the ephemerality of speech communication to be one of its great shortcomings. In this paper I want to suggest that the ephemerality which characterizes speech communication stimuli may act as an advantantage both to acquiring speech communication and to doing some of the peculiarly human things we do.

I use the term speech communication to mean the vocally-produced and auditorily-perceived manifestation of a human language. Human language is to be understood as being a body of symbols employed according to conventions adopted by the users, such conventions applying both to the import of the symbols themselves and to the permissible ways of stringing them together. A symbol is an item serving to designate an element of human experience, to which it has no necessary, fixed connection. The element of experience may be any exteroceptive or interoceptive sensation, or a sensed imaginal activity--the smell of a rose, the referred pain of angina pectoris, the experience of a dream.

Regardless of the source, any such element of experience is as real as any other, since all share the characteristic of being known only by dint of being apperceived in some way by the experiencer. Many people find it hard to hold such a concept in the mind because it is contrary to their accustomed

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ways of thinking about experience. How many of us habitually consider the world of experience to lie outside our skins, then grudgingly hedge the point to accommodate cases like the sense of balance? What is in one's mind is all too often dismissed as being "only in one's mind," as if its ontic status were somehow inferior.

I shall have more to say about the matter of what is in one's mind and how it happens to get out presently, when I turn to some of the symbolic aspects of speech communication. First, however, I want to make some observations about speech communication as a sensory stimulus, to see if there is any reason for thinking that it is especially attended to by the developing human being.

The person's ability to deal with the universe of sensory apperception begins as a somewhat undifferentiated capacity which deploys, at least in part, as a result of the exercise to which it is put. Vision, for instance, is rather well-developed at birth. Bower (1966) has shown that 8-week-old infants already have mastered some aspects of form-perception, depth-perception, size-perception, and shape constancy. In other species, this talent is even more precocious, as Fantz (1961) remarks of his work earlier with newly-hatched chicks a day old. Yet such quite possibly innate capacities must be exercised in order to develop fully. Riesen (1950) has studied the catastrophic effects of prolonged post-natal light deprivation on chimpanzees. In the same article he comments on the generally poor prognosis for people with congenital cataracts who have those cataracts removed much later in life. Before the cataracts are removed, such people can distinguish light from dark, but they cannot discern details of form. After surgery, they seem quite limited in their ability to "learn" to see. By the same token, children born with

severe hearing impairments appear to acquire spoken language with an ease paralleling the earliness at which they are fitted with hearing aids. That this differential success in learning to speak may not be due merely to a differential in learning time is suggested by the work of Lenneberg (1967) and others concerning a "critical period" for language acquisition, thought to be at its peak in early childhood and to terminate around the onset of puberty. The supposition is that those portions of the central nervous system which are to deal with spoken language must receive exercise if they are to mature properly.

It is the normal case that concerns us here, however. Given a normal human fetus and a normal human neonate, what, if anything, suits the speech communication stimulus to come to be used the way it eventually is used?

First, for any stimulus to be perceptible, the stimulus must contrast with the background against which it appears. In the case of acoustic events, the contrast obtains in the comparison of the present signal with any that precede it. The rapid fading of the speech communication stimulus suits it particularly well for perception, because it guarantees a continual dynamism over time. The signal can change rapidly without a previous portion of the signal masking a part which follows closely.

Second, of the two modalities we seriously consider to be candidates to support a naturally-emergent capacity for symbolically-mediated language, light-visual and sound-auditory, the auditory modality should have a tremendous head start over its competitor at birth. I have noted both that the neonate's senses are surprisingly well-organized at birth and that a full deployment of these senses depends upon their being exercised. There is, of course, nothing for the infant to <u>see</u> until he is born; but there is plenty

for him to hear from the prenatal instant at which his ear and brain are first capable of responding to sound. "We cannot," it has been said, "close our ear-lids." And so, the fetus is party to all the acoustic manifestations of its mother's activities, including her utterances with their particular dynamics of rhythm, melody, and amplitude. Surrounded by amniotic fluid, the fetus floats in a medium ideally suited to the conduction of sound by virtue of its density and its incompressibility.

Do these favorable conditions actually result in an early post-natal capacity for dealing with acoustic stimuli in general and with speech communication stimuli specifically? Evidence of an early acoustic specialization beyond the bilateral representation of audition in the temporal lobes comes from among the many studies on hemispheric lateralization. One technique such studies use is to measure and record evoked potentials of neuroelectric activity in the brain upon presentation of stimuli in various modalities. Though more precise instrumentation may now be nearing availability (Brenner et al., 1978), evoked potential studies now use the electroencephalograph as a tool.

EEG work has been done on subjects five weeks old and younger, and that work is of particular interest to us here. This quotation is from the abstract of a study performed by Davis and Wada (1977):

> Evoked potentials of 16 human infants (mean age = 5.0 weeks, S.D. = 1.8 weeks) were recorded from the left and right, temporal and occipital areas. Spectral analysis showed a high amplitude, localized, coherent center of activity within the left temporal area for click stimuli, and a high amplitude, localized center of activity in the right occipital area for flash stimuli (Davis & Wada, 1977, p. 23).

The authors comment upon their results:

> The hypothesis of referential and nonreferential processing modes for left and right hemispheric activity has been suggested in other forms by other authors (Levi-Agresti & Sperry, 1968; Diamond & Beaumont, 1972; Cohen, 1973). The comparative or relational processing of the left hemisphere could be described as analytic, sequential, serial, or differential. In contrast, the nonreferential mode of the right hemisphere could be termed holistic, gestalt-like, or integrative.
>
> In conclusion, our results, and those of others, have shown changing hemispheric asymmetries with speech versus nonspeech sounds, verbal versus nonverbal visual stimuli, and nonspeech stimuli in different modalities. These results can all be explained on the basis of the hypothesis that the left hemisphere is more able to relate stimuli to past experience, either immediate or long-term. Conversely, the right hemisphere would be more able to process stimuli which were not easily identifiable or referrable (Davis & Wada, 1977, pp. 29-30).

If Davis and Wada are correct, there is good reason to believe that acoustic stimuli are not only sensed by the fetus, but are familiar to the newborn in a way that visual stimuli are not. Are speech communication stimuli specifically familiar to the infant, in the sense of being considered a different sort of thing from other acoustic stimuli? Eimas, Siqueland, Juscyk, and Vigorito (1971) used operant conditioning techniques to train infants to work a switch activated by high-amplitude sucking. The infant's sucking on a nipple which contained the switch enabled him to prolong his exposure to various acoustic stimuli, including recordings of human speech, music, and other sounds. The results revealed that the infants not only could distinguish between speech and nonspeech stimuli but preferred speech stimuli, as measured by their persistence in the high-amplitude sucking task during a period of speech stimulation.

In turning next to the issue of the connection between the speech stimulus and the symbol, we must begin by pondering what sort of entity a symbol is. I mentioned earlier a rather general human tendency to consider mental experience as somehow less real than other experience. I consider this view

perverse, since whatever experience we have, we have by virtue of the central nervous system's activity upon either the signals sent to it by sensory analyzers or the signals it generates itself. Regardless of the point of origin for the process culminating in the experience of central nervous system activity which we term awareness, the realm of experience itself is unified.

Experience for the human being is more than a flooding in of sensoria from that part of the universe outside the body. Though much of what becomes experience originates there, experience is ultimately, to use Susanne Langer's term, projected upon the awareness from within. I have given one example of projection already, the referred pain of angina pectoris that I mentioned at the beginning of the paper. The heart has no pain receptors. The angina sufferer construes the location of his pain as near the surface of the skin of the chest, superficial to the actual infarct. The phantom pain suffered by amputees is another example. Here, sensation is "felt" in a limb, although the limb itself is no longer present.

This projection characterizes experiences that many people would dismiss as "only in the mind," too, and those experiences may be normal as well as psychopathological. We are all familiar with reports of people's "hearing voices"--Joan of Arc did--or of people's "seeing visions"--the prophet Ezekiel, for instance. Some of you may have had such experiences. We all dream, often in sound and color, and we experience these dreams as excursions through an external reality. Recent research in visual hallucinations experienced while an experimental subject is under the influence of an hallucinogen reveals that subjects tend to report similar hallucinations, especially those experienced early in the hallucinogenic "trip" (Siegel, 1977). It is thought that the

similarities, shown in these slides accompanying Siegel's article, arise from similar gross patterns of central nervous system activity.

Is the symbol itself a projectional entity? Langer (1942, 1953, 1967) has demonstrated this point convincingly in the case of the art-symbol. The artist, regardless of his medium, deliberately attempts to represent his feeling-state in the external environment where it can be apperceived exteroceptively by any and all comers. For Langer, incidentally, the term feeling is a synonym for awareness, and is not limited to emotional connotations. T. S. Eliot referred to the artist's works, these projectional products, as objective correlatives. In our terms they are, literally, symbols. Art-symbols have no direct, entailed relationship to the feeling-states they represent. The artist could have chosen a different, perhaps equally successful, way of going about his task.

The precursor of the art-symbol in the mind of the artist was not, however, a free-standing entity. The symbol-to-be and the feeling-state designated were once fused, requiring of the artist a focused effort to thrust forth a realization which, the artist hopes, will literally re-present his feeling to himself and to any additional audience. Romantic tales of starving, toiling painters aside, this task is heavy mental labor, as Eliot attests in one of his Four Quartets, East Coker:

> So here I am, in the middle way, having had twenty years--
> Twenty years largely wasted, the years of l'entre deux guerres--
> Trying to learn to use words, and every attempt
> Is a wholly new start, and a different kind of failure
> Because one has only learnt to get the better of words
> For the thing one no longer has to say, or the way in which
> One is no longer disposed to say it. And so each venture
> Is a new beginning, a raid on the inarticulate
> With shabby equipment always deteriorating
> In the general mess of imprecision of feeling,
> Undisciplined squads of emotion.

The art-symbol, though, is a peculiar breed of cat. Its distinguishing characteristic seems to be its particular meaning for each perceiver, rather than its consensual meaning for all. Is there reason to believe that the symbols of a consensually-adopted code like language emerge as a result of psychic distancing and projection? We know that each individual word does not follow such a progress for each person. Take "ophicleide," for example. This is an ophicleide. The word symbol works for me because I read in the dictionary last month that the object shown was an ophicleide. So I call it an ophicleide, and there's an end to the matter--no differentiation from primordial feeling-states about it.

Let's re-phrase the question, then, to ask: Is there, in the study of linguistic ontogeny, any evidence that the <u>developmental process</u> which culminates in symbol-usage follows a pattern of gradual abstraction between symbol and designatum, the symbol being used as a projectional device? The answer, on these terms, is yes, as Werner and Kaplan have shown in their work <u>Symbol Formation</u> (1963). Werner and Kaplan subscribe to an overarching principle of organismic development which they describe this way:

> We assume that organisms are naturally directed towards a series of transformations--reflecting a tendency to move from a state of relative globality and undifferentiatedness towards states of increasing differentiation and hierarchic integration. It is this tendency, formulated as the "orthogenetic principle," which serves for us to characterize development as distinct from other types of change over time (Werner & Kaplan, 1963, p. 7).

Werner and Kaplan propose that two sorts of progressive differentiation occur during the development of the symbolic capacity in the human mind. The first is the differentiation between addressor and addressee--between self and other--that makes conversations conversations. The second is the

differentiation between symbol and referent. The referent, as I have shown, is not ultimately the object, event, or situation one seems to name with the symbol; but the feeling-state one gains in experiencing the perception of the object, event, or situation in question. Thus, the key to answering our question lies in determining whether linguistic symbols are at first conceptually merged with their designata, than later become conceptually distanced from those designata. Werner and Kaplan demonstrate that this is so by showing the persistence of a faint, physiognomic aura, an affect, which remains in adult experience of words known in childhood.

That word and designatum are tightly bound in childhood is a psychological commonplace, known variously as concrete thought, primary-process thought, symbol-object confusion, and word-magic. It has been discussed by such authors as Cassirer (1955), Arieti (1967), Von Domarus (1944), Vygotsky (1962), Piaget and Inhelder (1969) and others.

Perhaps the reason the pieces of this puzzle of the relationship between the symbol and its referent have been assembled so often and have received so little notice is our tendency to view the symbol as an object attached to or detached from another object, the referent. When it is realized that two experiences, that of the symbol and that of the referent, are linked--at some times tightly; at others more tenuously; then the matter becomes easier to parse out.

What is it about the speech signal that fits it so magnificently to be the vehicle of the linguistic symbol? In the case of the formation of an individual's symbolic capacity, I believe the speech signal's ephemerality provides for both the necessary initial fusion of feeling-states and the necessary later separation.

Reynolds (1968) discusses Geschwind's (1964, 1965) suggestion that an important precondition for language is an organism's capacity to form what Geschwind calls cross-modal nonlimbic associations. Reynolds sketches Geschwind's position in this passage:

> In Geschwind's theory, object-naming is based on the ability to make cross-modal, nonlimbic associations . . . . The limbic system is part of the phylogenetically older brain and forms the neurological mechanism for emotional responses, such as sex, fear, and aggression (Smythies, 1966), although it mediates other behavior as well. It is anatomically distinct from a phylogenetically more recent structure, the neocortex. The neocortex can be divided into sensory areas that in turn can be subdivided on the basis of fiber inputs from the various receptors into visual, auditory, and somesthetic cortex. These are the sensory projection areas. Stimuli mediated by the sensory projections Geschwind terms nonlimbic stimuli.
>
> Geschwind theorizes that infrahuman animals readily form associations only between a limbic stimulus (e.g., pain) and a nonlimbic stimulus (e.g., a light flash). Only man has a ready facility for associating two nonlimbic stimuli, although monkeys can be trained to perform such tasks when the stimuli are in the same modality--if the stimuli are both visual or both auditory (Reynolds, 1968, p. 303).

What interests me here is the human capacity for cross-modal nonlimbic associations. As we know, most of the child's earliest words are deictic of elements in the visual field; yet those elements of the visual field are indicated both to and by the child in the acoustic field. Why?

It is impossible to attend upon two things simultaneously in the visual field--unless you have a split brain. What seems to us simultaneous visual perception is a rapid shifting of the attention, accompanied by a moving of the eyes to bring the fovea to bear on the objects of interest. We sense objects on the periphery of vision but cannot really attend to them without shifting the gaze.

It is, however, very easy to see and hear at the same time. You are both seeing and hearing me now. The simultaneity of visual and auditory

awareness provides for that necessary initial condition of fusion between symbol and referent. Meanwhile, the ephemerality of the speech signal underlines the indispensible quality of the relationship between the symbol and its designatum--that the connection between the two is not attributive. The word and the experience of it fade, while the experience of the designatum remains so long as the object, event, or situation in question remains in view. For that matter, the experience linked with the word need not be visual. Touch, taste, and smell all can linger as stimuli and sensations after the disappearance of the evanescent word that names them.

Some people feel that the visual modality and the print medium serve the acquisition of language fully as well as do the auditory modality and the spoken medium. The proponents of speech point out that every normal child acquires spoken language. The proponents of vision respond that the deaf learn to read and to use other visually-based systems, like American Sign Language. The advocates of speech counter that such skills are not acquired spontaneously; the advocates of vision may well cite cases of hyperlexia, the spontaneously-acquired capacity to read; and the argument continues interminably, as anyone who has inquired into the educability of the deaf knows (cf. Lane, 1976).

One of the problems that causes such arguments is the implicit assumption that writing is speech put down on paper, and writing is definitely not that, in the general case. Smith observes:

> Spoken language and written language are closely related, but not at the superficial level of spelling-sound correspondence. Contemporary linguistic theory indicates that English orthography is more closely related to underlying aspects of language meaning than to the sound patterns of any one dialect (Smith, 1975, p. 347).

Ideographic systems, like Chinese, are clearly no approximation to phonological events. One can, of course, devise graphemic systems to represent phonology, like the International Phonetic Alphabet, but reading a series of passages set down in phonetic script for their content is not easy. The "Why Johnny Can't Read" controversy has raged for decades around whether reading should be taught phonically or by more direct pattern association. Chall (1973) reports that the phonically-taught readers seem to do somewhat better than readers taught by other methods, but that the data do not reveal a clearcut advantage which can be attributed to the phonic approach itself. Perhaps the close attention the phonics method pays to smaller sound elements and their correlates in print helps the child master the idea that there is a close connection between the events of spoken language and the array of characters he sees, and perhaps, too, that close attention helps foster an awareness of spelling. Still, and ultimately, it is the symbolically-mediated concept which is coded in speech and, alternately, coded in writing; not the speech signal that is written down. Look at it another way. If speech were writing made audible, would we have something like what is shown here (slide)?

Thus far, I have suggested that the ephemerality of the speech stimulus makes it a particularly perceptible acoustic stimulus. Combined with the availability of the stimulus both to the fetus and to the neonate, and with the probably genetic predisposition the infant has to process such a stimulus, the circumstances lead to an actual infant preference for speech stimuli in the acoustic modality. Further, the ephemerality of the speech stimulus, combined with the human capacity for forming cross-modal nonlimbic associations, would appear to provide the necessary preconditions for the emergence of the

symbolic faculty in the child. If ephemerality is as important to human communication as I claim, why are we so enamored of writing, print, and other technologies for dealing with symbolically-mediated language? Such technologies make record keeping accurate and easy; and records are essential to cultures like ours. The importance of records can seduce us from the observation that speech does not leave the tangible records which print and writing do to the unwarranted generalization that, because speech does not produce such records, writing and print are ways of communicating that are inherently superior to speaking.

Mass literacy, which has both accompanied and fostered the rise of writing and print over the past few hundred years, has changed our perspectives on what human communication is. Writing and print produce messages which are objects, objects that intrude themselves between the person doing the writing and the person doing the reading. For the writer, communicating means producing a piece of work; for the reader, communicating has become a situation in which the work--not the author--"tells him something." The text takes on the appearance of containing an intrinsic meaning.

When Marshall McLuhan became one of the toasts of the intelligensia during the mid-'sixties, he did so with the insistence that the various technologies were not interchangeable means of conveying symbolically-mediated import. He claimed that one could not understand media by studying the ostensible "content" of the messages conveyed.

One thing McLuhan was trying to do was direct attention away from the message-as-artifact and towards the activities of the people involved in the communicative event, as they apprehend and comprehend messages in whatever form

the messages arrive. McLuhan captured the public fancy with his classification of media as "hot" or "cool." The terms hot and cool for McLuhan are indices of the degree to which the recipient of a message involves himself with the message projectionally. A hot medium conveys a message which the recipient perceives as being of high definition, replete with detail. Messages in a cool medium are perceived as being of low definition. In McLuhan's view, a person receiving a message in a cool medium considers the message incomplete because of its lack of detail. He senses that it is contingent upon him to fill in the missing pieces by supplying them imaginally. In our terms, he is projecting that imaginal material. McLuhan considers speech to be cool and involving, and writing and print to be progressively hotter and more disinvolving (McLuhan, 1964, p. 36).

Stated that way, McLuhan's claim can be puzzling; for the speech signal is not short of information as an information theorist would quantify it, and writing and print are not especially information-rich. One clue to the matter might be that we apprehend writing and print at our own pace, while the speaker imposes his pace upon us. We know that we can apprehend speech accurately at twice the normal conversational rate (Foulke, 1968). At least one company now produces specialized tape decks which take advantage of this human capacity. The decks are used to play back recorded verbal-vocal material, such as lectures and talking books, at accelerated rates. I think, though, that the answer to the puzzle of why speech is cool and print is hot lies not in the data rates but in the retention of the import.

Because writing and print are permanent, the reader can review the text if he misses or forgets something. Because speech is ephemeral, it is gone, as Ong has remarked (1970), in the instant of its coming into being. What

the listener misses, he must fill in for himself. What he wants to keep, he must memorize.

The burden record keeping places on the memory of a person in an oral-aural culture, and the way such a person deals with the burden show one reason for the involving nature of speech communication. Havelock has described the intense pitch to which involvement rises when record keeping is required. These two quotations summarize his views concerning the tailoring of verbal-vocal material for recallability and the individual's conscious and unconscious involvement with the recall process:

> All speech is produced by a series of bodily reflexes. Metrical speech is produced as these same reflexes are operated in special patterns and as certain other reflexes are brought into operation in parallel . . . Simply to repeat [a] statement is to set up a rhythm. But [such] rhythms . . . will not allow a fresh statement. So the main onus of sheer repetition, which the memory needs as a prop, is transferred to the meaningless metrical pattern which is retained tenaciously in the memory, and the fresh statements are then so expressed as to fit acoustically into the pattern . . . . The requirements of memory are met in a fundamental fashion through practicing a strict economy of possible combinations of reflex (Havelock, 1963, 148-149).

> The psychological principles governing this elaborate procedure are simple but fundamental. First, all spoken speech is obviously created by physical movements performed in the throat and mouth. Second, in an oral culture, all preserved speech has likewise to be created in this way. Third, it can be preserved only as it is remembered and repeated. Fourth, to insure ease of repetition, and hence of remembrance, the physical motion of the mouth and throat must be organized in a special way. Fifth, this organization consists in setting up patterns of movements which are highly economical (that is, rhythmic). Sixth, these patterns then become automatic reflexes. Seventh, automatic behavior in one part of the body (the voice organs) is then strengthened by parallel behavior in other parts of the body (ears and limbs). The entire nervous system, in short, is geared to the task of memorization (Havelock, 1963, 151).

The degree of involvement a member of an oral-aural culture has with

the speech signal tends to keep words psychologically close to their designata in experience. To use Werner and Kaplan's term, the differentiation between symbol and designatum is not very great. The thinking of a person in an oral-aural culture is generally very similar to what I have called concrete thought above. Thus, the spoken word and the written word both contribute to the process of symbol formation. The ephemerality of the spoken word abets the first stages of symbol formation. The abstraction of writing fosters the continuing differentiation between symbol and designatum that gives the symbol progressively greater flexibility.

Even in our own culture speech retains a power to entrain the attention. That is why a chain of self-service Denver parking lots installed an acoustic system last year:

> Drivers who park their cars in some downtown Denver lots are getting a reminder from "Big Brother" these days not to slip away without paying.
>
> Owners of a half-dozen Allright Auto Park lots have installed speaker systems to reduce a common problem: The estimated 5 per cent of patrons who ignore signs directing them to deposit their parking fees in designated boxes.
>
> "Your attention, please," blares a speaker mounted on a pole in each lot.
>
> "There is no free parking on this lot at any time.
>
> "You must pay in advance before walking off the lot, which is patrolled 24 hours a day, seven days a week. Cars not paid in advance will be ticketed without further notice . . ." (McGovern, 1977).

It is why anticollision alarms in airliners sound off, filling the flight deck with a strident, "Pull up! Pull up!" and why, when the Strategic Air Command sought an onboard system to warn pilots of inflight aircraft malfunctions, they chose one in which prerecorded notifications of the appropriate type were played through the aircrews' earphones, instead of a system relying

on lights, signs, or dials.

Lest we wonder why speech in our culture continues to have such a compelling character, we should note that all of us grow up in a milieu which, at the time, is an oral-aural culture. As children, we have no access to the record keeping technologies of print or writing until we are taught how to read and write.

When the involving nature of speech, stemming from its ephemerality, is considered along with the unobtrusiveness of the speech communication message-as-artifact, also stemming from its ephemerality, we can see the reason for another claim made for speech communication: that it fosters a peculiarly human quality in human relationships--the perception of the other as a particular person.

With no message-artifact to intrude itself between speaker and listener, the listener does not attend to the message <u>qua</u> message, but to the message as produced by the messenger. To Father Ong again we owe the observation that sound is the key to the interiority of that which produces it (Ong, 1970, 117-122). We get direct clues to the nature of the messenger as we hear him projecting some aspect of his momentary feeling-state into the external sensorium. We feel uneasy when we meet a so-called "silver-tongued devil," a "Philadelphia Lawyer," or a "flim-flam man," because people we see in terms of these stereotypes seem to have learned to conceal aspects of selfhood which we expect to find revealed in speech.

In an age of television we feel, perhaps, surer of who our media personalities are; less shocked when we see them in the flesh. But among those of us who listen to radio, who has not formed a mental picture of a familiar announcer, then discovered that the man looked not a bit as one had imagined him?

Even in a culture far from the oral-aural tradition, people use the sound of the man as the means to measure him. The point is not whether our assessments are always visually accurate, but that the assessments are always made.

We have come, then, to the position that the ephemerality of the speech communication signal is important to speech perception, to the ontogeny of symbolically mediated thought in language, and to the matter of person perception. Culturally, too, I think the ephemerality of the speech signal has been advantageous to Mankind.

We accept that Man's success is related intimately to his ability to pass on knowledge from generation to generation. Too, we believe that for much of human existence the tribes of Man have been at least sporadically nomadic. We have not been raising crops or husbanding animals for very long, historically speaking. The sine qua non of the nomadic existence is mobility. One must go elsewhere when the reindeer move, or when the local resources have been exhausted. Moving is much easier if you don't have to carry a library. It is much safer when your store of knowledge is not vulnerable to fire, flood, loss or theft. The cultural advantage of ephemerality is that, by forcing men to store records mnemonically, it frees them of excess baggage. I have often wondered how the bearers of the Arc of the Covenant felt, tramping around with those heavy stone tablets which Moses had brought back from the mountain. They must have thought, occasionally, that memorizing the Law would have led to a lot less work.

When I began working on this paper, I was reminded of a science fiction story I read many years ago and have not seen since. The protagonists of the story were alien archaeologists who had come upon the ruins of our own once intergalactic culture. The secret of its demise turned out to be that the

system of information storage and retrieval had become so vast and so complex that once something was put in, it could no longer be gotten out again in time to be of use. The machine had collapsed under its own weight. Now, I don't know if I'm that pessimistic about the current state of affairs, but when you look at your desk next Monday and I look at mine, might we not ask ourselves if there are advantages to ephemerality?

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